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Copy received by
E. Nye 5/10/89



May 8, 1989

Mr. W.D. McGee
Regional Supervisor
Alaska Department of Environmental Conservation
1001 Noble
Suite 350
Fairbanks, Alaska 99707

Re: Proposed Replacement of LM 1500 Turbine Combustion Cans

Dear Mr. McGee:

ARCO Alaska Inc. is currently evaluating the option of replacing the combustion cans on the LM 1500 turbines at Prudhoe Bay. This is to request your review and advice regarding the regulatory and permitting requirements associated with this proposal.

These turbines, two each at Flow Stations 1, 2 and 3, are pre-PSD permit sources which were first permitted by ADEC in August 1975. Although "grandfathered" under PSD rules, they have been included in source inventories since PSD I. As such, the allowable emissions are 257.9 tpy of NOx and 71.7 tpy of CO for each turbine (based on EPA emission rates of 7.4 gm/s NOx and 2.06 gm/s for CO). It should also be noted that these units are specifically listed in current ADEC air permits for the facilities.

The turbines are each equipped with 10 combustion cans manufactured by General Electric. In the past, these combustors have required routine, in-kind replacement following every 1,000 to 3,000 hours of operation; however, they are designed to perform for approximately 10,000 hours prior to requiring repair/replacement. The precise cause of the premature failure is unknown, in spite of extensive testing over the years.

ARCO would like to replace the GE combustors with cans manufactured by a different vendor (Circamet). Unit 14-1802 at Flow Station 3 has been experimentally retrofitted with the Circamet cans, with very favorable results. It appears that these combustors are of a sturdier design and thus are expected to perform considerably longer before replacement is necessary.

On April 10, 1989, Hunter/ESE performed stack tests on both the retrofitted Circamet unit (14-1802) and an unmodified unit (14-1801) in order to evaluate net changes in NOx and CO. The results of the testing are summarized in the following table:

	Actual 14-1801 Base Unit	14-1802 Circamet	Emissions Change
NOx - Tons/year @ 15% O2 ISO Standard Conditions	178.4	252.8	74.4
CO - Tons/year Method 10, Appendix A, Eq 10.1	103.4	89.1	(14.3)

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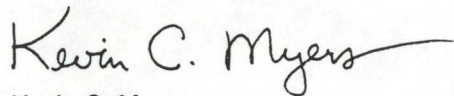
The test results indicate that the NOx emissions increase by 74.4 tpy in the Circamet unit while CO decreased by 14.3 tpy. You will note that the measured emissions are less than allowable emissions for NOx (257.9 tpy) and slightly higher than allowable for CO (71.7 tpy).

Based upon our past experience with the administration of the ADEC PSD program and our reading of the regulations (specifically 18 AAC 50.900(1); which authorizes the use of allowable emissions as the PSD baseline), we do not believe that a PSD permit is required. We would like to confirm with you our understanding of this matter.

By copy of this letter to EPA, we are also notifying EPA under the New Source Performance Standards program that these combustor replacements will take place. We believe that under 40 CFR 60.14(e)(1) these source changes constitute routine maintenance, repair and replacement and are thus exempt from NSPS requirements. Further, these changes do not meet the reconstruction threshold set forth in 40 CFR 60.15 because the fixed capital cost for the replacement parts is far less than 50% of the cost of a new turbine. It is requested that EPA make a determination on this issue.

In view of our purchasing lead times, we would appreciate a prompt review of this matter. I will be contacting Mr. Jack Coutts of your staff to arrange a meeting in the near future if further discussion is warranted.

Sincerely yours,



Kevin C. Myers
Manager,
Permits & Compliance
Prudhoe/Lisburne

cc: Ray Nye - EPA, Seattle